

IN THE CLAIMS

Please delete all prior lists of claims in the application and insert the following list of claims

1. **(CURRENTLY AMENDED)** A labeled acyl carrier protein comprising: an acyl carrier protein having bonded thereto a non-radioactive label, **wherein the non-radioactive label is a fluorophore.**
2. **(ORIGINAL)** The labeled acyl carrier protein of claim 1, wherein the acyl carrier protein is an apo-acyl carrier protein.
3. **(ORIGINAL)** The labeled acyl carrier protein of claim 1, wherein the acyl carrier protein is a holo-acyl carrier protein.
4. **(ORIGINAL)** The labeled acyl carrier protein of claim 1, wherein the acyl carrier protein is an acylated-acyl carrier protein.
5. **(ORIGINAL)** The labeled acyl carrier protein of claim 1, wherein the acyl carrier protein is derived from *E. coli*.
6. **(CANCEL)** ~~The labeled acyl carrier protein of claim 1, wherein the non-radioactive label is a fluorophore.~~
7. **(ORIGINAL)** The labeled acyl carrier protein of claim 1, wherein the non-radioactive label is a fluorophore covalently bonded to a tyrosine residue of the acyl carrier protein.

8. (CURRENTLY AMENDED) The labeled acyl carrier protein of claim 7, wherein the fluorophore is selected from the group consisting of dansyl, fluorescein, rhodamine, ~~FITC, TRITC~~ fluorescein isothiocyanate, tetramethylrhodamine isothiocyanate, and Texas Red.

9. (ORIGINAL) The labeled acyl carrier protein of claim 7, wherein the fluorophore is selected from the group consisting of dansyl and fluorescein.

10. (CURRENTLY AMENDED) A labeled acyl carrier protein comprising: an acyl carrier protein having at least one tyrosine residue; the tyrosine residue being modified to include a ~~non-radioactive label~~ fluorophore covalently bonded thereto.

11. (ORIGINAL) The labeled acyl carrier protein of claim 10, wherein the acyl carrier protein has no more than one tyrosine residue.

12. (ORIGINAL) The labeled acyl carrier protein of claim 10, wherein the acyl carrier protein is an apo-acyl carrier protein.

13. (ORIGINAL) The labeled acyl carrier protein of claim 10, wherein the acyl carrier protein is a holo-acyl carrier protein.

14. (ORIGINAL) The labeled acyl carrier protein of claim 10, wherein the acyl carrier protein is an acylated-acyl carrier protein.

15. (ORIGINAL) The labeled acyl carrier protein of claim 10, wherein the acyl carrier protein is derived from *E. coli*.

16. (CANCEL) ~~The labeled acyl carrier protein of claim 10, wherein the non-radioactive label is a fluorophore.~~

17. (CURRENTLY AMENDED) The labeled acyl carrier protein of claim ~~16~~ 10, wherein the fluorophore is selected from the group consisting of dansyl, fluorescein, rhodamine, ~~FTTC, TRITC~~ fluorescein isothiocyanate, tetramethylrhodamine isothiocyanate, and Texas Red.

18. (CURRENTLY AMENDED) The labeled acyl carrier protein of claim ~~16~~ 10, wherein the fluorophore is selected from the group consisting of dansyl and fluorescein.

19. (CURRENTLY AMENDED) A kit for investigating reactions involving acyl carrier proteins, the kit comprising a container having disposed therein an acyl carrier protein having bonded thereto a non-radioactive label. wherein the non-radioactive label is a fluorophore.

20. (ORIGINAL) The kit of claim 19, wherein the acyl carrier protein has at least one tyrosine residue, and the non-radioactive label is covalently bonded thereto.

21. (ORIGINAL) The kit of claim 20, wherein the acyl carrier protein has no more than one tyrosine residue.

22. (ORIGINAL) The kit of claim 20, wherein the acyl carrier protein is an apo-acyl carrier protein.

23. (ORIGINAL) The kit of claim 20, wherein the acyl carrier protein is a holo-acyl carrier protein.

24. (ORIGINAL) The kit of claim 20, wherein the acyl carrier protein is an acylated-acyl carrier protein.

25. (ORIGINAL) The kit of claim 20, wherein the acyl carrier protein is derived from *E. coli*.

26. (CANCEL) ~~The kit of claim 20, wherein the non-radioactive label is a fluorophore.~~

27. (CURRENTLY AMENDED) The kit of claim ~~26~~20, wherein the fluorophore is selected from the group consisting of dansyl, fluorescein, rhodamine, ~~FITC, TRITC~~ fluorescein isothiocyanate, tetramethylrhodamine isothiocyanate, and Texas Red.

28. (CURRENTLY AMENDED) The kit of claim ~~26~~20, wherein the fluorophore is selected from the group consisting of dansyl and fluorescein.

29. (ORIGINAL) A method of making a holo-acyl carrier protein having a non-radioactive label affixed thereto, the method comprising:

(a) reacting an apo-acyl carrier protein having at least one tyrosine residue with a chemical reagent capable of covalently bonding an amino moiety to the tyrosine residue, to thereby yield an apo-acyl carrier protein having an amino- modified tyrosine moiety; then

(b) covalently bonding a non-radioactive label to the amino-modified tyrosine moiety of step (a), thereby to yield an apo-acyl carrier protein having a non-radioactive label covalently bonded thereto; and then

(c) reacting the apo-acyl carrier protein of step (b) with a holo-acyl carrier protein synthase under time and conditions sufficient to convert the apo-acyl carrier protein to a holo-acyl carrier protein having a non-radioactive label affixed thereto.

30. (ORIGINAL) A method of making an acylated-acyl carrier protein having a non-radioactive label affixed thereto, the method comprising:

(a) reacting an apo-acyl carrier protein having at least one tyrosine residue with a chemical reagent capable of covalently bonding an amino moiety to the tyrosine residue, to thereby yield an apo-acyl carrier protein having an amino- modified tyrosine moiety; then

(b) covalently bonding a non-radioactive label to the amino-modified tyrosine moiety of step (a), thereby to yield an apo-acyl carrier protein having a non-radioactive label covalently bonded thereto; then

(c) reacting the apo-acyl carrier protein of step (b) with a holo-acyl carrier protein synthase under time and conditions sufficient to convert the apo-acyl carrier protein to a holo-acyl carrier protein having a non-radioactive label affixed thereto; and then

(d) reacting the holo-acyl carrier protein of step (c) with an acyl-ACP synthetase under time and conditions sufficient to convert the holo-acyl carrier protein to an acylated acyl carrier protein having a non-radioactive label affixed thereto.

31. (NEWLY ADDED) A labeled acyl carrier protein comprising:

an acyl carrier protein having at least one tyrosine residue, wherein the acyl carrier protein is selected from the group consisting of apo-acyl carrier proteins, holo-acyl carrier proteins, and acylated-acyl carrier protein; and

a fluorophore covalently bonded to the at least one tyrosine residue of the acyl carrier protein.

32. (NEWLY ADDED) The labeled acyl carrier protein of claim 31, wherein the acyl carrier protein is derived from *E. coli*, and the fluorophore is selected from the group consisting of dansyl, fluorescein, rhodamine, fluorescein isothiocyanate, tetramethylrhodamine isothiocyanate, and Texas Red.

33. **(NEWLY ADDED)** The labeled acyl carrier protein of claim 31, wherein:
the acyl carrier protein is derived from *E. coli*;
the fluorophore is selected from the group consisting of dansyl, fluorescein, rhodamine, fluorescein isothiocyanate, tetramethylrhodamine isothiocyanate, and Texas Red; and
the non-radioactive label is covalently bonded to the at least one tyrosine residue via an amino moiety.

34. **(NEWLY ADDED)** A labeled acyl carrier protein comprising:
an acyl carrier protein having at least one tyrosine residue, wherein the acyl carrier protein is selected from the group consisting of apo-acyl carrier proteins, holo-acyl carrier proteins, and acylated-acyl carrier protein;
an *o*-amino moiety bonded to the at least one tyrosine residue; and
a non-radioactive label covalently bonded to the at least one tyrosine residue of the acyl carrier protein via the *o*-amino moiety.

35. **(NEWLY ADDED)** The labeled acyl carrier protein of claim 34, wherein the acyl carrier protein is derived from *E. coli*, and the non-radioactive label is selected from the group consisting of dansyl, fluorescein, rhodamine, fluorescein isothiocyanate, tetramethylrhodamine isothiocyanate, and Texas Red.

36. **(NEWLY ADDED)** A kit for investigating reactions involving acyl carrier proteins, the kit comprising:
a container having disposed therein an acyl carrier protein having at least one tyrosine residue, wherein the acyl carrier protein is selected from the group consisting of apo-acyl carrier proteins, holo-acyl carrier proteins, and acylated-acyl carrier protein; and
a fluorophore covalently bonded to the at least one tyrosine residue of the acyl carrier protein.

37. **(NEWLY ADDED)** The kit of claim 36, wherein:
the acyl carrier protein is derived from *E. coli*;
the fluorophore is selected from the group consisting of dansyl, fluorescein, rhodamine, fluorescein isothiocyanate, tetramethylrhodamine isothiocyanate, and Texas Red; and
the fluorophore is covalently bonded to the at least one tyrosine residue via an amino moiety.

38. **(NEWLY ADDED)** A kit for investigating reactions involving acyl carrier proteins, the kit comprising:
a container having disposed therein an acyl carrier protein having at least one tyrosine residue, wherein the acyl carrier protein is selected from the group consisting of apo-acyl carrier proteins, holo-acyl carrier proteins, and acylated-acyl carrier protein;
an *o*-amino moiety bonded to the at least one tyrosine residue; and
a non-radioactive label covalently bonded to the at least one tyrosine residue of the acyl carrier protein via the *o*-amino moiety.

39. **(NEWLY ADDED)** The kit of claim 36, wherein:
the acyl carrier protein is derived from *E. coli*;
the non-radioactive label is selected from the group consisting of dansyl, fluorescein, rhodamine, fluorescein isothiocyanate, tetramethylrhodamine isothiocyanate, and Texas Red; and
the fluorophore is covalently bonded to the at least one tyrosine residue via an amino moiety.